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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,326	04/19/2004	Timothy Griffin	61277-60014	1063

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EXAMINER

CASAREGOLA, LOUIS J

ART UNIT PAPER NUMBER

3746

DATE MAILED: 02/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/826,326

Applicant(s)

GRIFFIN ET AL.

Examiner

Louis J. Casaregola

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-18 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

### ***Species Election***

This application encompasses multiple species of the inventive subject matter. There are three alternative swirl generator configurations as shown respectively in Figures 2, 6, and 7, and there are also four alternative fuel injector arrangements as shown respectively in Figures 5a, 5b, 5c, and 5d. Pursuant to 35 USC 121, applicants are required for a complete response to elect a single disclosed species by selecting one of the three alternative swirl generator configurations and by additionally selecting one of the four alternative injector arrangements. The combination comprising the selected swirl generator and the selected injector arrangement will constitute the elected species. Applicants are further required to list all claims readable on the elected species including any claims subsequently added (MPEP 809.02(a)).

None of the claims appear properly generic to all species.

Applicants are additionally advised that a mere argument alleging that a generic claim exists or is allowable will not satisfy a species election requirement. For a complete response, applicants must elect a single species and list the claims readable on that species as set forth above.

***Claim Rejections - 35 USC 112***

Claims 1-18 are rejected under 35 USC 112, first and/or second paragraphs, as the claimed invention is not described in such full, clear, concise and exact terms as to enable any person skilled in the art to make and use the same, and/or for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

The claims all describe a swirl generating unit as "surrounding an internal burner space"; see claim 1, lines 4-5 and 13-14, and claim 18, lines 5-6 and 14-15. It is not seen how the cited language corresponds to the disclosed embodiments of the invention. As shown for example in Figures 1 and 2, swirl generator 1 surrounds space 11 described simply as a "swirl space" (page 8, line 11). The reaction or burning zone 17, i.e. burner space, is shown as being entirely downstream of swirler interior space 11, and hence, the swirl unit does not appear to surround an internal burner space in the manner claimed. Either the disclosure is incomplete or inaccurate on this point, or the present claim language is misdescriptive.

Claim 5 further describes a swirl generator and fuel feed as "being integrally formed, then separated after", and claim 17 includes a similar passage. This language does not constitute a proper product-by-process limitation, and its limiting effect, if any, is unclear within the context of the present apparatus claims. The disclosure does not adequately establish how the claimed end product would be any different if its individual

components were formed integrally and separated as opposed to being formed separately.

Claim 12 additionally recites “means for independently controlling a premix fuel feed to the first and second fuel feeds”. The preferred embodiments of the invention as shown, however, do not appear to include any type of control apparatus that could perform such a function. The disclosure thus appears to lack essential detail, and the claimed “means” is considered indefinite.

Claim 13 further describes the swirl generator as a “swirl grating”. This feature is exclusive to the species of Figure 7; see element 1 and page 12, lines 7-9. Claim 13 also depends from claim 1, which requires the first fuel outlet openings (elements 18) to be located radially outside the swirl generator (see claim 1, lines 7-8). This limitation however does not appear applicable to the Figure 7 species, which is shown as having a swirl generator extending beyond the radial limits of openings 18. The present disclosure thus does not support use of the fuel outlet location of claim 1 in combination with the species of Figure 7. Claim 1 is therefore not generic to the Figure 7 species, and since claim 13 is drawn to that species, it is in conflict with its parent claim.

***Claim Rejections - 35 USC 102***

Claims 1, 2, 14, 16, and 18 are rejected under 35 USC 102(b) as being anticipated by Shekleton (US Pat. 5,150,570).

To the extent that the above listed claims are accurate and definite, they are sufficiently broad to read on prior art gas turbine combustion systems of the type disclosed by Shekleton. Attention is called to Shekleton's Figures 1 and 2; note that wall 50 in conjunction with angled tubes 70 and/or 72 constitutes a swirl generator which surrounds combustor or burner space 74. Openings 70 correspond to the claimed combustion air inlet openings, apertures 88 correspond to the claimed fuel outlet openings radially outside the swirl generator, and openings 72 correspond to the inlet openings in communication with the fuel outlet openings. Note also that apertures 88 are arranged around the axis of burner 74 as in claim 2, and openings 70 and 72 all have a tangential dimension and thus read on the broadly recited tangential slots in claims 14 and 16.

***Additional References***

Shekleton '955 and Parker et al are cited as disclosing further pertinent examples of combustion systems with air swirlers.

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571-272-4826 (M-F; 7:30-4:00)  
703-872-9306 FAX  
February 14, 2005



**LOUIS J. CASAREGOLA**  
**PRIMARY EXAMINER**

If repeated attempts to reach the examiner by telephone are unsuccessful, the art unit supervisor, Cheryl Tyler, can be reached at 571-272-4834.

Information regarding the status of this application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR, and status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).